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(54) Catadioptric optical system

(57) In a catadioptric optical system, the first focusing lens system A includes a concave mirror Mc, and it forms an intermediate image of the first plane R. The second focusing lens system B includes an aperture stop AS, and it forms a refocused image of the intermediate image on the second plane W. A reflecting surface M_{P1} is placed so that the light flux leaving the first focusing lens system A is guided to the second focusing lens system B. There are one or more lens surfaces that satisfy the condition

$$h/\phi < 0.85 \quad (1)$$

and one or more lens surfaces that satisfy the condition

$$0.85 < h/\phi < 1.2 \quad (2)$$

where h is the height at each lens surface of the light beam that is assumed to be emitted from the intersection of the optical axis of the first plane and passes through the lens surfaces with the maximum numerical aperture, and ϕ is the radius of the diaphragm of the aperture stop.

At least one of the lens surfaces that satisfy condition (1) and at least one of the lens surfaces that satisfy condition (2) are aspheric. The first aspheric element is placed near the intermediate image, while the second aspheric element is placed near the concave mirror or the aperture stop. The concave mirror itself may be formed as a second aspheric element.

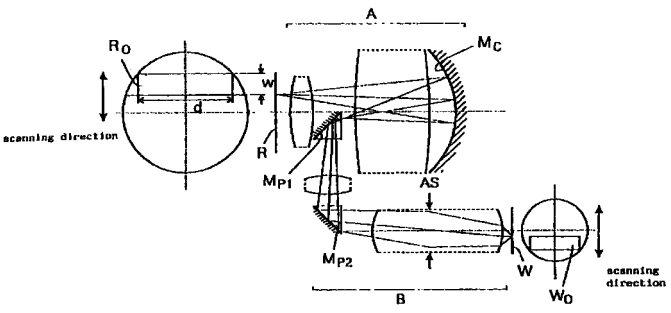

Fig. 1

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EUROPEAN SEARCH REPORT

Application Number
EP 98 10 5955

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TECHNICAL FIELDS SEARCHED (Int.Cl.6)

G02B
G03F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
BERLIN	19 July 1999	von Moers, F

CATEGORY OF CITED DOCUMENTS

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